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ABSTRACT

A study examined how collaborative writing groups functioned in a Madison, Wisconsin high school classroom. The class in the study was ninth-grade English "Academically Motivated" (which is neither high nor low tracked). The researcher spent the first 9-week quarter in the classroom observing, taking field notes, teaching some of the classes that related to writing, administering a questionnaire, and interviewing the students retrospectively. Students wrote three papers in their collaborative writing triads. A high-, a medium-, and a low-functioning group were identified. Discourse for the third writing assignment was coded. Results indicated that the students in the collaborative writing groups: spent a significantly greater time planning than when they wrote alone, but they did not spend much time revising; and did not engage higher order concerns such as purpose and audience as much or as explicitly as expert writers do. Results also indicated that: (1) the high-functioning group spent little time openly discussing issues of task representation or procedural issues, instead actively moving through the composing process but embedding in their planning and composing discourse both rhetorical concerns and revision; (2) students kept a flow of thought going by giving alternatives, elaborating, clarifying, and evaluating; and (3) the most effective group engaged in a significantly higher percentage of cognitive conflict than the other groups. (Six tables of data are included; 48 references, the coding scheme, and the student questionnaire are attached.) (RS)

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TOWARD AN UNDERSTANDING OF COLLABORATIVE WRITING

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TOWARD AN UNDERSTANDING OF COLLABORATIVE WRITING

BACKGROUND

Writing, like all forms of literacy, is social in its aims. What makes writing so difficult for students is that it lacks the natural prompting that dialogue entails (Moffett, 1983; Scardamalia, Bereiter & Goelman, 1982; Vygotsky, 1986). It seems natural, then, to socialize the writing process. But while the benefits of student collaboration in the writing process have often been noted, too often that collaboration occurs near the end of the process on an almost completed text. This paper discusses the results of a study which examined collaboration as coauthoring.

Because the term "collaborative writing" is used to mean a variety of things--peer proofreading or editing of an almost finished individual product, peer help in the planning stage of individual papers, or writing separate sections of one product--it is useful to identify specific distinguishing features. As I use it in this paper collaborative writing implies significant interaction and shared decision-making and responsibility between group members in the writing of a shared document (Morgan, Allen, Moore, Atkinson, & Snow, 1987).

While there are composition theorists who believe in socially constructed knowledge and use the term collaborative writing, they all refer to students helping each other at one or more stages of the writing process but on individual papers. Ironically, their words provide a perfect theoretical rationale for coauthoring; they just do not take the ideas to their logical conclusion. Clifford (1981) explains that the ultimate goal of using groups in writing classes is to allow students to see how writing can evolve from sketchy ideas to an edited product. Collaborative writing has the potential to do just that as students start out with one or more vague ideas and determine what should appear in a final text.

Bruffee (1984) also gives a justification for collaborative writing although he does not advocate it. He believes that students should be involved in conversation at as many points as possible in the writing process and that the aim of writing instruction is to engage students more deeply with what they write. However, students will not have the motivation to talk through others' writing at each stage of the process and at a fully engaged level unless they, too have a stake in the outcome. Only with a collaborative product is that level of engagement possible.

OBJECTIVE

Although students in coauthoring groups have been found to learn a great deal from each other (Daiute, 1986) and gain more from their interactions than students involved in peer editing (DiPardo & Freedman, 1988), and although coauthoring is a common means of writing in the professions (Ede & Lunsford, 1990), there is little research that examines how these groups function in classrooms.

The objective of this study was to engage in that examination. Specifically, I will report on the findings for three questions.

1. What sort of strategic talk occurs about planning and revising in collaborative writing groups in one ninth grade classroom?
2. How do students in these groups engage in higher order writing concerns such as purpose and audience?
3. What factors affect the success of these collaborative writing groups?

THEORETICAL PERSPECTIVES

This study is grounded in cognition and social constructionism, viewpoints that have sometimes been seen as oppositional. I find it intriguing that research in collaborative writing informs and is informed by both cognitive and social views of knowledge construction. Theory and research in both communities point to thought processes actually originating in social interaction (Palinscar, Stevens, & Gavelek, 1989). Students benefit by internalizing each others' cognitive processes, arrived at by communicating socially (Damon, 1984).

From a cognitive perspective collaborative writing functions as a cognitive apprenticeship which situates writing in a social and functional context. Students coauthoring naturally stress global before local skills so that they build conceptual maps before attending to the details that comprise the whole (Collins, Brown & Newman, 1989). Collaborative writing is situated in several ways: it gives students the immediate feedback of a present audience, it is a mode of writing in the professions (Ede & Lunsford, 1990), and it distributes cognition onto the social "surround," a practice that all real world learning entails (Perkins, 1990). Coauthoring by its very nature provides cognitive scaffolds (Bruner, 1978) which are an integral part of the learning process.

While the cognitive explanation of coauthoring's potential is important, it is the theoretical underpinnings of social constructionism that seem the most compelling as an explanation of collaborative writing's potential. The most important contributions to the theoretical framework of social constructionism as it relates to collaborative writing were made by Lev Vygotsky in developmental psychology and Mikhail Bakhtin in language/text study. Both inform our concepts of learning and language production, and both envision thought, speech, and writing as dialogues with voices we know through social contexts.

Vygotsky's theoretical contributions (1978, 1981, 1986) help to explain the potential of collaborative writing. In an important break from previous conceptions, he redefined the relationship between development and learning (1978). For Vygotsky, learning leads development instead of following it. The goal, then is to target teaching to the skills just beyond what a student is presently capable of achieving alone, what Vygotsky calls the zone of proximal development. This is an area in which a child can accomplish with adult guidance or the help of a more capable peer what that child could not accomplish alone (1978).

Which student functions as the most capable peer in collaborative writing groups can be very flexible since there are so many points to be expert on. The student who does not write well by most standards can suggest good ideas on which to build or can provide vigorous examples. In turn, that student has the opportunity to learn from another who organizes well, or keeps purpose and audience in mind, or one who delights in choosing a word for effect. The very process of finding out what they are "expert" on in itself aids students' cognitive development (Wertsch & Stone, 1985).

In *Thought and Language* (1986) Vygotsky addressed directly the most daunting problem of writing, the fact that it is a double abstraction: abstraction from the sound of words and abstraction from audience. It simply takes more words to express an idea in writing because the syntax of inner speech is abbreviated. To accommodate the absent audience, which needs more elaboration than inner speech provides, the writer must be conscious and deliberate. Collaborative writing can be at least part of the solution for these problems; it can function as a bridge from inarticulate inner speech to socialized speech to writing, the most elaborated form of language. Peer group talk about writing takes advantage of the Vygotskian premise that speaking and writing are fundamentally social acts. Because collaborative writing allows voices to be heard, provides the prompts of oral conversation, and allows internalization of content and strategies from a social context, it makes sense both as a learning tool and as a mode of writing in terms of Vygotskian theory.

Bakhtin also emphasizes the voices of our social context. His theory of dialogism (1981) emphasizes the socially constructed nature of language and contextualizes the study of language use and development by inviting us to see language as fully interactional. Dialogism is a way of understanding language as a part of a larger whole where all meanings of a word interact, possibly conflict, and affect future meanings. Our thoughts come from all of our associations; they arise out of what Bakhtin calls heteroglossia, the incorporation of "another's speech in another's language" (1981, p. 324). The more voices we know, the more interactions we have, the richer our language choices can be. Dialogism offers a rationale for interaction during the writing process and for collaborative writing in particular. Since our thoughts and words are dialogized at any rate, socializing the writing context simply contributes to a richer language environment. Because coauthoring externalizes text-in-process, it allows us to hear divergent voices. This can help to create the productive cognitive conflict that leads to growth in language.

All of this talk about multiple voices and collaboration makes some educators exceedingly nervous about individual accomplishment. In the end we often do have to produce alone, it is true, but writing groups, rather than provide a necessary crutch can provide instead scaffolding which is flexible and temporary. Dialogism never denies that our thoughts can be our own; rather it explains our thoughts as originally conceived in a social context that was internalized. We can write individually, but only by having already joined a conversations of voices. We can develop an individual style, but only by being exposed to many other styles. The more voices we hear, the more choices we have, and the more fluent our own. Through shared language we create ourselves. Coauthoring groups are exceptionally well designed to

promote active language learning and to allow for the verbal exchanges that are the base of learning itself and its expression through writing. Before we had access to theories such as the zone of proximal development and dialogism we lacked a complete rationale for the use of instructional practices such as coauthoring (Forman & Cazden, 1985).

METHODOLOGY

The study took place in one classroom in the fall of 1991 at a Madison, Wisconsin high school. The school deals with its racially and socio-economically diverse population in part by tracking. The class in this study was 9th grade English Academically Motivated (ACAMO) which is neither the high nor low track. Although the title of the class makes these students sound privileged, that was far from the truth, nor were they all motivated to do well in school. Two of the twenty-four ninth graders have since dropped out of the regular school program because of truancy.

I spent the first nine week quarter in that classroom observing, taking field notes, teaching some of the classes that related to writing, administering a questionnaire, and interviewing the students retrospectively. Their teacher Mavis and I worked together for several days during the summer of 1991 planning the nine weeks and continued to work closely together over the quarter. She taught students literature and vocabulary, and I taught the classes on writing that led up to the coauthoring of a persuasive paper, the task for this study. Specifically, I discussed with the class the rationale for collaborative writing, assigned two short collaborative writing activities, and spent a week discussing persuasive writing and engaging the students in exercises that focused on aspects of persuasion such as underlying assumptions and counter-arguments. The students wrote three essays in their coauthoring triads, the first defining courage, a topic Mavis wanted to tie into their study of *To Kill a Mockingbird*. The second and third were persuasive papers on mandatory ninth grade study hall at the school and on the availability of birth control for minors without parental consent. For each writing assignment the students were given three days and their talk was audiotaped.

The triads were formed early in the year before Mavis and I had assigned much writing. So while what little we did know about their writing performance was taken into account, the primary factors in establishing heterogeneous groups were gender, race, and outgoingness. Since the students came to the school from several middle schools and some from schools outside of the area, many of the students in groups did not know each other. Therefore, many did not have preconceived ideas about who was "smart," a situation that encouraged more equal status and fuller interaction. I did not assign roles to the group members such as recorder or leader because I wanted to describe their discourse as it occurred naturally and observe how responsibility was negotiated and how each group explored its own implicit rules (Ede & Lunsford, 1990; Jaques, 1984).

Although I coded only the discourse for the third writing assignment, students coauthored three essays for several reasons. One was so that they could get used to writing essays, particularly persuasive essays. Many of

them had written primarily in an expressive or creative mode in middle school. I also wanted the students to have experience with and feel comfortable with collaborative writing and with each other as well as with the recording equipment. My data is based on observation over nine weeks and specifically on the nine days the students spent writing together with tape recorders present, a questionnaire, interviews, and the coauthoring transcripts.

On the basis of observation, Mavis and I chose a high, middle, and low functioning group. The primary criterion was level of interaction/engagement with the task and therefore with each other. The high group--Rasheeta, Teresa, and Michael--seemed involved with the assignment and all three seemed to contribute to the writing talk. The middle group was chosen because it was typical. Alison, Gia, and Joe worked together fairly well but also had some problems. Joe was very quiet and Alison was an inconsistent leader. Other groups had similar dynamics. The low group--Mark, Tom, and Sheri--was chosen because those three students interacted in a noticeably unproductive way.

The coauthoring discourse of those three groups writing the third collaborative paper was transcribed and coded using a coding scheme I devised designed for exhaustiveness and mutual exclusivity in tracing the interactions that go on in collaborative writing. It highlights strategic thinking about process and higher level thinking which are, in fact, connected. Talking about process places students at the highest level of thinking (Hertz-Lazarowitz, 1989). This coding scheme addresses my research concerns about the composing process, strategic thinking, higher order thinking, and cognitive conflict. (See Appendix A) A graduate student coded 20% of conversational turns with 91% inter-rater reliability.

The tag codes I use in this scheme might need some additional explanation. When I first devised the scheme, I had separate categories for evaluation, clarification, elaboration, and so forth, but it became clear that coding for disagreement, for example, without a way to indicate the purpose and context of that disagreement was not fully productive. To ignore context was to fail to take into account that "the utterance is filled with *dialogic* overtones..." (Bakhtin, 1986, p.92). The following dialogue illustrates the point.

M: OK. First of all, we should start out with a couple sentences for an introduction

R: We should finish our story first before we start the introduction so we'll all be in one place

Michael's suggestion was coded as planning local structure (SPSL). Rasheeta's rejoinder was coded as giving an alternative idea (SPSL/A). In this way both utterances are coded for planning local structure, which both clearly are, but the coding also makes it clear that a student offered an alternative idea.

In analyzing the discourse I used conversational turns as the unit of analysis. If within one turn a student focused on two separate ideas or processes, then that turn was coded twice, say for composing text and for giving a directive. Coding the discourse and arriving at numerical summaries of percent of total conversational turns offered one way to answer the three research questions. However, coding was not always enough to get a true picture. Students often embedded their thinking about purpose or process in talk that was not directly codable in separate conversational turns. Coding

gave me a quantifiable means of looking at the discourse. It was very helpful but not always sufficient as a means of understanding the nature of collaborative writing discourse.

RESULTS/DISCUSSION

STRATEGIC TALK ABOUT PLANNING AND REVISING

To analyze student discourse about planning and revising I relied on the coding summaries of the three groups whose talk was transcribed and coded and on qualitative data sources: the transcripts, questionnaire results, and interviews. The quantitative data substantiates the qualitative, and that was its function: to provide another way to understand the interactions in these groups. Generally the ninth grade students in these coauthoring groups spent a significantly greater time planning than when they wrote alone, but they did not spend much time revising if one thinks of revising as rethinking that goes on at the end of a linear process. The revision that went on was instead negotiated throughout the writing process, often in ways that were not directly codable.

Planning in Collaborative Writing Groups

One of my hypotheses was that students in coauthoring groups would spend a significant amount of time planning because the interactions that groups engender necessitate negotiation. Students coauthoring build reasoning together and ideally extend ideas each might have individually by interanimating one another. The summary data about planning are presented in Table 1.

Students in the collaborative writing groups I observed spent a significant amount of time on strategic talk about planning; on average 25% of all codes involved planning. Percent of codes and time spent are roughly approximate since conversational turns tended to be quite short and since a turn was coded again if the focus of the talk changed. As we know from our own experiences working with student writers, to spend a quarter of one's time planning is rare indeed on an in-class writing assignment. The research on student planning shows the typical college student writing alone to spend between one and four minutes planning before writing (Perl, 1979; Panko, 1979). Ninth graders are likely to spend even less time than that. Many students indicated on the questionnaire and in interviews that they had never planned before they wrote prior to coauthoring. While part of that might be caused by the demands of persuasive writing, collaborative writing in and of itself forces more conscious attention on planning before writing because some form of consensus is necessary. A group can not just begin.

Planning was analyzed with five separate codes: planning global or local structure, planning global or local content, or requesting ideas. Of the 25% of time/effort devoted to planning, 12% was requesting ideas with utterances such as "What other reasons do we have?" or "How should we start it?" When students write individually they may not have internalized conversational partners (Bereiter & Scardamalia, 1987) and so may not question our processes in such a direct way, but students coauthoring must verbalize their inner questions to get the help of the group. Whereas in peer response groups

students asking for help often do not receive it (Freedman, 1987, 1992), in a coauthoring context students have every incentive to help one another since there is joint ownership.

An average of 28% of all planning codes (7% of codes overall) dealt with planning the structure of the paper both globally and locally. Considerations of the global structure were not neatly discussed at the beginning of group talk. Perhaps that would be characteristic of expert writers (Bereiter & Scardamalia, 1987), but these ninth graders discussed global structure on and off over the three writing days. Typically, a group would talk about their ideas while one group member jotted these down. Then when they spoke of the structure they would refer to the planning sheet. All groups functioned this way although they had never been told to have such a sheet. The group that negotiated collaborative writing discourse the most successfully also paid the most attention to global structure although they did not do so until the second day, after they had planned the content of the paper. Their talk about global structure was about the order of their content: "Do you want to start off with the story or with an introduction that say here is an example of what could happen?" or about the number of paragraphs needed. Rasheeta seemed to have the right idea: "as many as we need." This group spent 8% of their planning energies on global structure, not much, but more than the other groups.

Discussing local structure seemed to occur more naturally for most groups and often occurred as students moved from one point to another throughout the three writing sessions. Often these were more mentions of local structure than discussions. "So now I'll start a new paragraph." "Is this a new paragraph?" Other times their concerns were where in the paper certain ideas should go.

T: Are we still going to keep "This led to a touchy debate that split the community in half in this paragraph or are we going to move it down to here?"

R: We're going to leave it there.

Discussions of structure inevitably blend in to those of content since students can not discuss organization without focusing on what is being organized. Compared to planning the structure of the papers, coauthoring groups spent much more time on planning content. On the average 15% of total codes and 60% of the planning codes were spent on global and local content. Interestingly, the best group tended to focus on local content while the most dysfunctional group discussed global content far more. It seems what happened was that they never devoted enough attention to the specific reasons why they believed what they believed. Discussions of global content often occurred on the first day as groups talked through their reasons. When this planning occurred late in the writing process, it often signalled a group that was in trouble.

One of the greatest benefits of collaborative writing is that it provides the classroom construct for students to model planning for each other. It appeared both to Mavis and to me that students were learning planning strategies from each other. I wanted to find out if the students thought so too. The discussion that follows is based on self-reports and

therefore indicates the students' view on planning. This does not lessen its value, however, since students can give us valuable information about their perceptions of the experience (Webb, 1982). On the questionnaire (see Appendix B), in response to the statement "Writing together we spent more time planning papers than I do alone," fifteen students agreed or strongly agreed, four disagreed, and five indicated the time spent was about the same. Students who routinely planned in some way before beginning a paper reinforced their planning processes and demonstrated their strategies naturally in the group, an instance of coauthoring allowing students to contribute from their strengths. The interviews showed that students were aware of learning planning strategies. "The group helped me to brainstorm better. Before I didn't plan much. Now I might be more open to ideas and that'll help me think better. I'll spend more time on it." The student from whom she had learned about planning discovered that talking was another way to brainstorm, and she said she might talk to her parents now about a topic she had to write about.

Revising in Collaborative Writing Groups

Students in this study did not revise in traditional, linear terms. In fact, virtually no discourse was coded as pure revising. Students did not plan day one, write day two, and revise day three; it did not play out that simply. Although some groups recopied drafts, no group discussed a completed draft and then envisioned ways to reorganize it or change its emphasis. They did not discuss ways to change the structure, even at the local level, did not think of additional examples to add, did not look for awkward or wordy phrasing.

Lack of time is a possible cause for the lack of revision, but another was that the coding scheme was insufficiently sensitive to identify revising that occurred while the paper was being constructed. What might have been revising in process was coded as other major categories such as planning or composing with tag codes indicating disagreement or alternatives. That is a wholly different view of revision. The following excerpt is typical of discourse that was not coded as revision but certainly served that function. This group constructed text together in such a way that ideas and phrasing were reexamined. Rasheeta, Teresa, and Michael were working on a narrative introduction about "Jill" for their paper supporting minor's rights to birth control without parental consent. This talk was coded primarily as planning and composing, but it can also be seen as revising in process.

- R: One night Jill finally saw the
 T: One night Jill felt the pressure very heavily
 R: Yeah, say that. One night Jill finally. No. We should say something like...How do you say that? There's something I want to say but I don't know how to say it. Something like...Just write what you said
 M: What did I say?
 R: you said One night Jill finally
 M: gave in?
 R: No, something about pressure
 T: He said One night Jill felt the pressure like...or something. Jill finally felt the pressure or something like that
 R: We should say something like Jill was really depressed because she

- really liked Tim
- T: Jill really liked him and they
- R: He got her drunk and she said OK (laughing)
- M: So one night Jill felt the pressure
- T: very heavily
- R: No, that doesn't sound right
- T: Well, she'd been subjected to pressure. Well, she'd been feeling the pressure for
- R: That doesn't mean she was depressed from it
- M: Jill felt the pressure
- T: No, no, no. I'm just saying she felt the pressure a lot that night, more than she had ever felt it before
- R: [to Michael] Do that again. Look down like that. Don't his eyebrows look green when he does that? Oh, my God! Doesn't it?
- M: Anyway, one night Jill felt the pressure. How did you say that now?
- T: Jill one night
- R: It doesn't sound right, felt the pressure heavily. It's like drinking heavily
- T: One night Jill felt the pressure more than she had ever felt it before
- R: Right!
- T: Write that

In this discourse we see these students really working dialogically to create/revise text. Michael was the recorder that day, so he was trying to put on paper the phrasing agreed upon. Rasheeta often challenged the other two, and by doing that, she prompted the group to re-examine their choices and, in fact, revise in process.

I do not believe the students were always aware when they were revising or even editing in the course of writing together. Their conversations were more fixed on ideas, an important aspect of coauthoring. Revision for these ninth graders was an ongoing negotiation externalized through the vehicle of collaborative writing. Students offered ways to proceed and others disagreed. They suggested reasons to support their stance that were modified. Their suggested phrasing was elaborated upon or challenged outright. Coauthoring interactions are often planning/composing/revising/editing all together. Collaborative writing at its best and most interactive is a truly recursive process. Multiple thought processes are externalized, interrelated and interanimated as dialectic.

DISCOURSE ABOUT HIGHER ORDER WRITING CONCERNS

The most immediate answer to how students in collaborative writing groups engage in higher order concerns such as purpose and audience is that these ninth graders did not engage in these concerns as much or as explicitly as expert writers do. They did not review their writing, for instance, to discuss whether audience and purpose had been sufficiently taken into account. Only occasionally would they even evaluate whether they had a good way to counter an opponent's argument. They rarely talked openly about the complex goal networks that experienced writers refer to when they think aloud about

their writing (Flower & Hayes, 1981a, 1981b; Higgins, Flower, & Petraglia, 1991; Rubin, 1988). But just because there was not a high percentage of conversational turns coded as purpose or audience does not mean that students were not guided by those concerns. While coding allowed for overt expressions of these higher order goals, it was also necessary to look at the transcripts for composing discourse that assumed an underlying knowledge of audience or purpose.

On average the students in these groups mentioned audience in 4% of their conversational turns. (See Table 2) Having an audience for the persuasive paper was a requirement, so often discussions of audience occurred early in the writing process and were fairly perfunctory. Typically, once audience was decided, the concept did not arise again until the group started thinking of counter-arguments. Statements coded as purpose/stance, an average of 2% of all codes, also occurred early in the writing process. Most groups had no trouble arriving at their stance on birth control for minors without parental consent.

The students in this class did not think of either purpose or audience as problematic. The goal of the assignment was deceptively simple to them: pick an audience who would not necessarily agree with your point of view and convince them. They picked as audiences parents, school staff, or local political figures. Typically, audience and purpose were not mentioned again until they started discussing counter-arguments which could occur anywhere in the writing process. In deciding what points to include in the paper, students often took higher level concerns into account. Kelly, Jenny, and Frank were writing on the second day when concerns arose about purpose and audience.

K: It has to do with all the STD's [sexually transmitted diseases]

F: And to counter-argue that we're going to have uh it is illegal for minors

J: Are we going to put that in there?

K: No

J: I don't think we should. It's too strong on the other side

K: Yeah

F: So?

K: So we're trying to get them to get over to our side

Because these students realized that mentioning STD's might work against their purpose of trying to get parents to agree that birth control should be available to minors, their first impulse was to drop the point. Later they thought of a way to argue back and included the STD argument.

Another group decided how to support their argument that birth control should be available in schools on the basis of purpose/audience. This excerpt shows higher order concerns on students' minds in ways that could not be picked up by coding.

R: Would be beneficial because. Say because the students will be more apt to use it

R: No, because the more harm could come to the students without the birth control

Rasheeta sensed that their audience would be much more sympathetic to the argument that birth control would prevent harm to students than that availability would make students more "apt to use it" as Teresa said. This segment was coded as composing. No one mentioned purpose or audience, but those higher order concerns showed through the composing choices being made.

Word choice is another element of writing that can be rhetorically driven by concerns of purpose and audience. Kelly, Jenny, and Frank debated what to call adolescents in this instance.

J: If kids do end up having to ask their parents for birth control

K: Kids

J: Should I put kids or should I change it?

F: No, just put young adults. Why say kids?

J: Kids sounds bad with sex and stuff

F: My point exactly

K: If young people

This text would have been coded as composing because this coding scheme was not sensitive enough on its own to highlight the underlying concern for audience and purpose. "Kids" does, in fact, "sound bad" with regard to sex if the object is to convince parents that minors should have access to birth control.

Students often considered purpose and audience when they themselves might not have been aware of it. In interviews, most students said they talked about audience and purpose just to establish them. As Gia said, "We didn't talk about audience because we agreed on it." That reaction was typical. In fact, considerations of audience and purpose did affect many of their decisions in word choice and in which arguments to use. Although not always conscious of it, these students did operate with rhetorical goals.

FACTORS AFFECTING THE SUCCESS OF COLLABORATIVE WRITING GROUPS

To ascertain what factors affected the success of these ninth grade coauthoring groups, it is necessary to make comparisons among the groups. That can be done by looking at the data produced by the coding of the high, middle, and low group transcripts. I will look at the differences among the three groups in three areas: writing process discourse, dialogic engagement, and cognitive conflict.

Distribution of Discourse Categories Across Three Groups

When one looks at the summary of data for task representation (Table 2), one notes some striking differences in how talk was distributed among the categories of the coding scheme in the high through low groups. The lowest functioning group spent more than twice as much time/effort on task representation as did the highest functioning group, 19% vs. 8%. The low group devoted 7% of its conversational turns to audience considerations versus 2% for the high group, 4% to purpose vs. 1%, 4% to requirements vs 2% and 3% to genre vs 1%.

These results are certainly counter-intuitive. One would think that the group that talked the most about delineating the task would be perceived as successful, but that was not true in this study or in the pilot study which

preceded it. Part of the reason for this has already been discussed: the students did not really problematize any aspect of task representation. On the codable surface at least, audience was just a matter of choosing a group that would not agree with the stance and purpose was simple--get that audience to agree. The focus of the talk about requirements and genre was merely to review them, to check with each other, not to relate them to their other goals. While the weak group was going over the assignment, the strong group was devoting their time to planning or to actually composing text. The pattern seems to be that the strong group took issues of task representation into account while they were planning or actually composing. They did not often talk openly about genre, requirements, purpose, or audience; instead, they composed aloud with a tacit understanding of those issues.

If we look at how much effort went toward planning for the high/middle/low groups (see Table 1), we see the most successful group spending 30% of their time/energy on planning versus 20% for the middle group and 24% for the low group. That 24% figure for the low group probably would have been considerably lower had they not changed their stance midway through the writing process and had to replan the paper. In planning, the best group was doing more. Perhaps that is because planning, as opposed to task representation, seems active. It moves the writing process forward in a way that students in the high group could appreciate.

The percentage of conversational turns that involved actual composing reflect the forward momentum of the strongest group (See Table 3). They devoted twice as much time to actually composing text together as the low group. A total of 42% of all their codes were composing. The middle group devoted 28% of their talk to composing, and the low group 21%.

Those other groups must have devoted time to something else, then. (See Table 4) One way they spent their time was in going over procedural issues, primarily giving each other directives. For the low group 13% of all codes were procedural, for the middle group 15%, and for the high group 9%. Another striking difference is in the percentage of codes that indicated affective statements about each other: 11% for the low group, 7% for the middle group, and 2% for the high group. Of those affective statements, the most prominent and the most damaging were negative personal statements. The low group spent 8% of all codes saying negative things about each other and the middle group 4%, but the high group made no disparaging comments about each other at all. Although I will not deal with this issue in this paper, the social/affective elements are certainly a major factor in determining the success of a group. Status issues of domination and marginalization have the power to override any cognitive considerations. Listening to the tapes of all of these groups taught me, if nothing else, that a teacher must be keenly aware of the social issues in groups. These issues should be talked about explicitly and monitored.

The groups also devoted time differently within the catch-all miscellaneous that included re-reading text, study related talk about equipment or materials, incomplete or unclear statements, and off-task or social talk (See Table 5). The high group had 14% of all discourse coded under miscellaneous versus 23% for the middle group and 24% for the low group. The most significant differences were found in off-task or social talk. The low group engaged in talk not strictly related to the topic for 13% of all

codes as compared to 7% for the middle group and 5% for the high group. While even the most productive talk in collaborative writing groups is social, the group that talked most about the paper, its focus and its words, was perceived as the strongest group.

The numerical summaries the coding scheme produced show a strong group spending little time openly discussing issues of task representation or procedural issues, but instead spending significant amounts of time planning and composing--actively moving through the composing process but embedding in their planning and composing discourse both rhetorical concerns and revision. The other two groups spent far more time talking about the task, its requirements, and each other. They had to negotiate what seemed to be tacitly agreed upon by the high group.

Dialogic Engagement

Having looked at how collaborative writing discourse was distributed over the writing process, I wanted to return to how the success of coauthoring groups was linked to their level of verbal engagement. Collaborative writing makes interior dialogues external. While inner speech is abbreviated, having to express ideas in process forces students to externalize their choices. In the process of expression they create and modify their own thinking. Added to that learning is the learning that occurs by having others externalize their thoughts. "[T]he degree of dialogized influence, one on the other, can be enormous" (Bakhtin, 1981, p.340). For these reasons engagement in and through collaborative writing is vital to defining success, and it is for those very reasons that I based my choices of high/middle/low groups on their discourse, not on their written products.

That the group chosen as the highest functioning interacted with each other the most was borne out by the total number of conversation turns for each group. The high group had 898 conversation turns over the three writing days; the middle group had 485 and the low group 492. The high group kept a stream of talk going without lapsing into silences as the other groups did. They composed their text in a torrent of words. It was the students' verbal exchanges that generated the content, their language a communicative construction (Bakhtin, 1985).

I sensed that the high group was not only talking more but that they were also talking differently, more interactively. I wanted to see if the coding I had done could show the "internally dialogic quality of [their] discourse" (Bakhtin, 1981, p.269). The tag codes I used do show how the high group interacted with each other in a more engaged way than the other groups. The tag codes, explained earlier (see Table 6), were added to other codes such as composing text (CT). In the following conversation Alison and Gia were composing their narrative introduction about "Pam."

- A: Pam just like any of the others wishes birth control
could have been available
G: to her
A: OK birth control could
G: could have been easier
A: available to her
G: Yeah, OK

CT
CT/E
CT
CT/A
CT/A
CT/Av+

Alison was speaking text and writing it down. Gia supported that oral composing by elaborating and trying out alternative phrasing. The tag codes allowed me to see when students were really writing dialogically and still know about what aspect of writing they were interacting.

The tag codes corroborated the decisions that were made on observation alone about coauthoring success. As Table 6 shows, for the high group 51% of all conversational turns had tag codes, the middle group 38%, and the low group 32%. This method of determining involvement got at the very factors that I believe determine success in groups. Students keeping a flow of thought going by giving alternatives, elaborating, clarifying, and evaluating are involved with each other's ideas and with the very processes of coauthoring through which learning occurs.

Cognitive Conflict

Productive cognitive conflict is a major factor in the success of these ninth grade coauthoring groups. Daiute and Dalton (1988) define cognitive conflict as the "realization that one's perceptions, thoughts, or creations are inconsistent with new information or another person's point of view" (p.251). Collaborative writing is well suited to promote that conflict since it involves social interactions leading to consensus which support cognitive development. It makes sense that a group which merely agreed to suggested text would be less involved and probably would produce weaker writing than a group that challenged each others' ideas so that the speaker would have to clarify reasoning and support ideas. That productive conflict was a key element in determining the success of these coauthoring groups is significant since it corroborates what other studies have found about group work in general (e.g. Brown & Palinscar, 1989; Gere & Stevens, 1985; Johnson & Johnson, 1979; Kahn, Walter, & Johannessen, 1984; Mugny & Doise, 1978) and collaborative writing in particular (Daiute & Dalton, 1988; Syverson, 1989).

The transcripts of the coauthoring sessions show cognitive conflict being played out. In general, the more productive conflict a group generated, the richer the interactions. I counted as cognitive conflict any conversational turn with an /A tag code signalling an alternative idea or phrase or one with an /Ev- code signalling disagreement. Signalling cognitive conflict by using tag codes was effective because it allowed me to "find" specific instances and still know what the conflict was about. The excerpt that follows involves composing text (CT). The group was composing the end of their paper by tying it into the ideas of their narrative introduction. By offering alternative ideas, they forced each other to clarify their points. The coding scheme is included as Appendix A.

- M: If birth control was made available to Tim and Jill
their lives would have been much different
- R: Or say the outcome could have been different
- M: The outcome?
- R: Yeah, because she wouldn't have been pregnant.
That was the outcome
- T: Or she'd have less of a chance of being pregnant.
You have to use birth control
- R: Outcomes. Yeah, I know
- M: Outcome

CT

CT/A

CT/C

CT/A

CT/A

CT/Ev+

CT/A

T: Of the situation might be different

CT/A

The summary figures that coding produced (see Table 6) show cognitive conflict to be a major factor separating the high from the low functioning group in this study, the most effective group engaging in a significantly higher percentage of cognitive conflict than the other groups. For the high group fully 20% of all conversational turns indicated an alternative idea or word or a disagreement leading to a new word, phrase, or idea being presented. For the middle group 11% of the codes involved conflict, and for the low group 7%. Specifically, the high group gave an alternative idea or phrasing in 13% of all codes versus 6% for the middle group and 3% for the low group. Negative evaluation occurred less frequently overall, but still was much more present in the discourse of the high group: 7% versus 5% for the middle group and 4% for the low group. The differences between these groups who were chosen for their level of engagement are striking. It is interesting that although high/middle/low groups in the pilot study were chosen from the quality of their texts not their talk, the results were similar. For the high group 16% of all codes involved cognitive conflict versus 10% for the middle group and 4% for the low group. Engaging in cognitive conflict seems significant in determining the success of collaborative writing groups.

Because collaborative writing necessitates consensus, students are likely to disagree or offer alternative ideas and thereby engage in cognitive conflict. That forces them to legitimize their arguments and their language choices to a greater extent than they might writing alone. It is not surprising that this as well as other studies find a link between cognitive conflict and learning because productive conflict engages students in higher order thinking.

CONCLUSION

The study that this paper is based on was an attempt to understand the nature of collaborative writing groups in a high school setting, a situation previously unexamined. Studying coauthoring groups allows us to focus on socially constructed knowledge of the writing act. If we understand the dynamics of coauthoring in even one setting, we have a better chance of understanding it more generally so its theoretical advantages can be realized. Those theoretical advantages are many. Writing itself is a tool for clarifying and organizing thinking and learning. By writing together students compound the benefits writing provides. They open out their thinking about writing and become more aware of their own cognitive strategies as well as learn from their peers doing the same. Collaborative writing operates on the Vygotskian premise that one's thinking and writing develop through social interactions. Students engaged in a common writing project are likely to be able to teach each other in multiple zones of development. There is a good chance one is just slightly ahead of the others on some aspect of writing. They also may be able to help each other because they may have a clearer sense than their teacher of what has been difficult or frustrating in their common assignment (Collins, Brown & Newman, 1989; DiPardo & Freedman, 1987). The externalization of thinking about writing is a primary strength of

coauthoring.

Another strength is that collaborative writing focuses on higher order thinking, something that schools do not emphasize enough. Our students are adept at lower order skills but are not accomplished at any task that asks them to defend their opinions (Langer & Applebee, 1987). Coauthoring, by its very nature, demands that students defend their choices to their peers. They must explain reasoning and word choice in light of the demands of clarity, purpose, and audience. They must analyze and synthesize in the process of debating text-in-process.

Pedagogically collaborative writing allows us to focus on socially constructed knowledge of the writing act. Engaging students in collaborative writing is based on the assumption that "the nature of writing [is] an epistemological process..." (Spear, 1988, p.8). Students will remember the process of learning to write long after they have forgotten the content. What students will remember from coauthoring might be a real sense of audience or new ways to plan. They might take away from writing together the belief that despite differences of opinion, we can learn from each other or that there are various ways to approach writing, all useful lessons about writing in or out of school.

In interviews I asked the students whether they thought ninth grade English teachers should incorporate some collaborative writing into their classes. Without exception they said yes. I would have been more wary of that response had the questionnaires not showed the same slant. The reasons the students gave indicate what they thought they learned. Half of them said coauthoring taught students to work with others. Even those students who indicated they did not always enjoy the process said they knew group skills were important. The same number said collaborative writing helped them learn how other students wrote and how others thought about writing which they felt would help them improve their own writing. Many made a point of mentioning that they learned how to brainstorm by writing with others. A quarter of the students mentioned that collaborative writing was fun, a comment I do not dismiss. If students can have fun while they learn and write, they have a better chance of really constructing knowledge for themselves.

In a Bakhtinian sense all writing is collaborative. But coauthoring brings alive the voices of our minds by externalizing them. We must capitalize on those externalized voices to help students better understand the writing process and their own strategies. Students need not write in a vacuum. Collaborative writing engages students in "a process of knowing...the talk itself an enactment of that process of engagement" (Barnes, Britton & Torbe, 1990, p.109). Certainly students need to write individually; collaborative writing should not be the only vehicle for expression. But rather than work against the goals of individual writing instruction, coauthoring works for them by allowing students to proceed from their own strengths. "To think well as individuals we must learn to think well collectively" (Bruffee, 1984, p.640).

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Dale/Collaborative Writing

TABLE 1
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
DEVOTED TO PLANNING

	HIGH	MID	LOW
TOTAL	30	20	24
Content/Global (SPCG)	2	7	11
Content/Local (SPCL)	12	7	6
Structure/Global (SPSG)	8	0	2
Structure/Local (SPSL)	7	2	3
Requesting Ideas (SPR)	1	4	3

TABLE 2
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
DEVOTED TO TASK REPRESENTATION

	HIGH	MID	LOW
TOTAL	8	15	19
Difficulty (STD)	0	0	1
Audience (STA)	2	2	7
Purpose/Stance(STP)	1	0	4
Requirements/Content (STR)	2	5	4
Genre (STG)	1	4	3
Meta/Writing (STW)	2	2	0

Dale/Collaborative Writing

TABLE 3
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
DEVOTED TO COMPOSING

	HIGH	MID	LOW
TOTAL	46	35	25
Composing Text (CT)	42	28	21
Mechanics(CM)	2	7	3
Requesting Text Content (CR)	2	0	1

TABLE 4
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
DEVOTED TO PROCEDURAL AND AFFECTIVE CONCERNS

	HIGH	MID	LOW
TOTAL PROCEDURAL	9	15	13
Group Functioning/ Directives (PG)	8	11	12
TOTAL AFFECTIVE	2	7	11
Negative (AN)	0	4	8

Dale/Collaborative Writing

TABLE 5
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
DEVOTED TO MISCELLANEOUS

	HIGH	MID	LOW
TOTAL	14	23	24
Off Task/Social Talk (OT)	5	7	13
Re-reading Text (RR)	2	5	3
Study Related Talk/ Materials (SRT)	4	7	5

TABLE 6
PERCENT OF TOTAL NUMBER OF CONVERSATIONAL TURNS
INCLUDING TAG CODES AND COGNITIVE CONFLICT

	HIGH	MID	LOW
TOTAL	51	38	32
Alternative ideas/ phrasing (/A)	13	6	3
Asking for clarification (/C)	12	13	9
Elaboration (/E)	8	4	5
Evaluation/ Positive or agreement (/Ev-)	8	9	8
Evaluation/Negative or disagreement (/Ev-)	7	5	4
Evaluation/Uncertain or indifferent (/Ev?)	3	1	1
Cognitive Conflict (/A) or (/Ev-)	20	11	7

COMPOSING

CR requesting text content
CT literal suggesting of text
CM mechanics

STRATEGIC THINKING ABOUT PROCESS

TASK REPRESENTATION

STD difficulty
STA audience
STP purpose/stance
STR requirements/content
STG genre
STW meta-writing talk

PLANNING

SPCG content-global
SPCL content-local
SPSG structural-global
SPSL structural-local
SPR requesting ideas

REVISING

SRCG content-global
SRCL content-local
SRSG structural-global
SRSL structural-local
SRR requesting ideas

PROCEDURAL SUGGESTIONS

PT time management
PS status of the text
PG group functioning/directives to group

AFFECTIVE ELEMENTS

AA personal associations
AP positive
AN negative

MISCELLANEOUS

RR rereading text
OT off task
U unclear
INC incomplete
SRT study-related talk
O other

TAG CODES USED THROUGHOUT

/A alternative idea/phrasing
/C clarification or asking for clarification
/E elaboration
/EV evaluation
+ positive/agreement
- negative/disagreement
? uncertain/indifferent

STUDENT QUESTIONNAIRE

This questionnaire is about your opinions on the collaborative writing we've been doing for the last month or two. You will rate how much you agree or disagree with each statement. Here's an example.

	Strongly Disagree			Strongly Agree
Writing together was boring.	1	2	3	4 5

As you read the statement, you will know whether you agree or disagree. You would circle 5 if you strongly agreed. If you agree, but not so strongly, circle the number 4. If you disagree with the statement, circle 2, and if you strongly disagree, circle 1. If you neither agree nor disagree, or if you are not sure, circle 3.

Please be honest in your evaluation of the experience. Really. There are no right or wrong answers. The only correct responses are those that are true for you.

I have left space under each item for you to write in comments. If you need more room than that space provides, put the number of the item on the back and keep writing.

	Strongly Disagree			Strongly Agree
1. I'd rather write with a group than alone.	1	2	3	4 5

Comment:

2. I got the chance to express my views in the group.	1	2	3	4 5

Comment:

		Strongly			Strongly
		Disagree			Agree
3. My ideas got into the papers we wrote.	1	2	3	4	5

Comment:

4. I got along with everybody in my group.	1	2	3	4	5
--	---	---	---	---	---

Comment:

5. People in my group listened to each other's ideas.	1	2	3	4	5
---	---	---	---	---	---

Comment:

6. Writing together we spent more time planning papers than I do when I write alone.	1	2	3	4	5
--	---	---	---	---	---

Comment:

7. Writing together we spent more time revising papers than I do when I write alone.	1	2	3	4	5
--	---	---	---	---	---

Comment:

8. Writing together we spent more time checking spelling, punctuation, and grammar than I do when I write alone.	1	2	3	4	5
--	---	---	---	---	---

Comment:

9. Every member of the group put about the same amount of effort into writing into writing the papers.	1	2	3	4	5
--	---	---	---	---	---

Comment:

- | | Strongly
Disagree | | | Strongly
Agree | |
|---|----------------------|---|---|-------------------|---|
| 10. We wrote all parts of the paper together rather than dividing up the work. | 1 | 2 | 3 | 4 | |
| Comment: | | | | | |
| 11. Members of my group sometimes disagreed about what to say or how to say it. | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| 12. One person in the group tended to be the leader. | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| 13. I learned new ways to brainstorm/plan writing from my group. | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| 14. I learned new ways to organize a paper from my group. | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |
| 15. I would like to write collaboratively again. | 1 | 2 | 3 | 4 | 5 |
| Comment: | | | | | |